Abstrakt

Title: Biomechanical gait analysis in cerbral palsy

Objectives: The main aim of this work is to compare pressure values on feet of young man with cerebral palsy during for him normal gait, gait with French crutches in narrow (modified) and wide (natural) holding and with crutch held only at left hand.

Methods: One 23-years-old proband with sapstic triparetic cerebral palsy was participated in a qualitative research (case studies). Young man was examined using the Pedar – X pressure measuring system. The proband was subjected to measurements with pressure insoles placed in his shoes. Natural gait measurement, narrow (modified) and wide (natural) crutches grip and crutche on left side all measurements with five repetitions were performed, each with four step cycle. Evaluated were the pressure distribution and the magnitude of the vertical force component.

Results: Proband´s gait showed considerable asymetry in the step cycle. The pressure distribution on the feet was more uneven during walking with the crutches narrow held against the natural gait. However, the greatest asymmetry and congestion of the left leg was created when walking with crutches with wide (natural) grip. During measurement with the crutch on the left, there were no significant decreases or increases in values. The vertical component of the reaction force is disrupted with significant fragmentation of the two-tail curve on the left foot. Curve visibility is not impaired on the right foot but reaches lower values.

Keywords: Pedar-X system, step analysis, triparesis, walking with crutches, step cycle, pressure distribution on foot